

Hobbies

WEEKLY

CONTENTS

	Page
Tea Waggon - - -	1
Cabinet Cone Speaker - -	3
Library Book Holder - -	4
Useful Cabinet - - -	5
A Hectograph - - -	6
Hints and Tips - - -	6
Glass Cutting - - -	7
Home-made Cements - -	7
House Water System - -	8
Corner Cupboard - - -	9
Hiking Pleasures - - -	10
Camera Flashlight Unit -	11
Renewing Sash Cords - -	12
Stamp Collecting - - -	13

PATTERN SHEET FOR A
MEDAL CABINET

April 5th, 1950

Price Fourpence

Vol. 110 No. 2840

THIS is a welcome article of furniture in any home, saving time and much trotting about, carrying tea and dinner things from kitchen to dining room. It is provided with an extra deep lower tray, so if the waggon is used for conveying tea things from the house to the garden, when the weather permits such a pleasure as an open air meal, then there is little danger of the extra jolting tipping crockery over.

For the construction, oak or beech-wood is an excellent wood to employ, but if unobtainable a good quality deal will make a satisfactory article. The

A USEFUL SMALL TEA WAGGON

work is not difficult, the necessary mortise and tenon joints being of the simplest. It is just an ordinary piece of household carpentry, quite within the scope of the average woodworker.

General dimensions will be found in the front view of the waggon, Fig. 1 and the side view, Fig. 2. Cut the four legs from wood $1\frac{1}{2}$ ins. square, lay them on the bench, side by side, and square lines across for the mortises necessary for the rails.

Rails

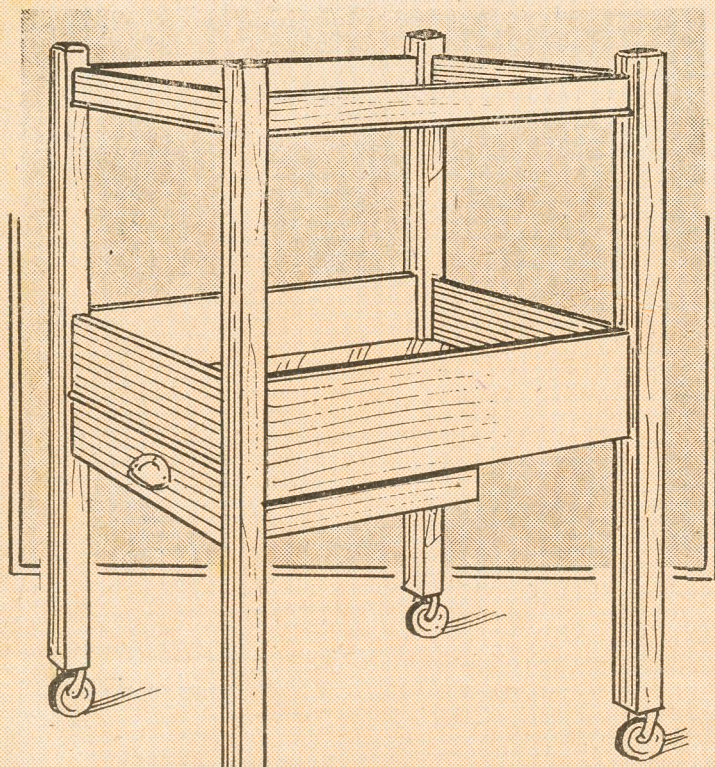
The top rails are from 1 in. wide wood, the tenons being $\frac{3}{4}$ in. and $\frac{3}{4}$ in. long. The lower rails are 3 ins. wide at the ends and $4\frac{1}{2}$ ins. wide at the sides. All these rails are cut from wood $\frac{3}{4}$ in. thick.

Having squared the lines across, gauge lines for the mortises, $\frac{3}{4}$ in. apart, exactly central along the legs. When the rails are cut from the $\frac{3}{4}$ in. wood, the tenons of the lower ones will be as follows. The end rails have two, each 1 in. long, and separated by $\frac{1}{2}$ in. at the centre. The side rails have three tenons, each 1 in. wide, and separated by a distance of $\frac{1}{2}$ in. between each, the top tenon being $\frac{1}{4}$ in. from the top of the rail. Fig. 2 shows these details to help make the above clear.

Leg Joints

The mortises in the legs must be marked as to length to suit these tenons naturally, and can then be chiselled out to a depth of $\frac{1}{2}$ in. Try for fit, and when satisfactory, mitre the ends of the tenons so they can meet in the mortises. A too close meeting between the mitred ends is not desirable, as glue may get between, in fact will, and prevent the joints closing up tightly. Leave a trifling space between them, as at (A).

Now glue all the joints and knock



All correspondence should be addressed to The Editor, Hobbies Weekly, Dereham, Norfolk.

them well home. Leave for awhile for the glue to get hard, then the bottoms of both trays can be fitted on. These bottoms can be cut from $\frac{1}{4}$ in. plywood, or possibly a good quality of substitute board would suit as well.

Top Tray

For the top tray cut a rectangle 1ft. 8 $\frac{1}{2}$ ins. long and 1ft. 4 $\frac{1}{2}$ ins. wide. At each corner saw out a $\frac{3}{4}$ in. square to clear the legs. Glasspaper the edges of the tray bottom to a smooth curve and fix to the under edges of the rails with glue and small screws.

The bottom of the lower tray requires a piece of plywood the same length as the top one, but only 1ft. 3 $\frac{1}{2}$ ins. wide. The corner pieces to be sawn out measure $\frac{7}{8}$ in. by $\frac{3}{8}$ in. Fix in similarly to the top one, but as the side edges butt up

The drawer is a useful adjunct to the article, most handy for cutlery and table linen. It can be any length within the capacity of the waggon, but 12 ins. to 15 ins. will probably be considered

WOOD

Legs (4)—1 $\frac{1}{2}$ ins. square and 2ft. 4 ins. long.
For upper rails— $\frac{3}{4}$ in. by 1 in. by 7ft. run.
For lower rails— $\frac{3}{4}$ in. by 3 ins. 3ft. run.
For ditto, $\frac{3}{4}$ in. by 4 $\frac{1}{4}$ ins. 4ft. run.
Wood for drawer— $\frac{3}{4}$ in. by 3 ins. 7ft. with one piece 3 $\frac{1}{2}$ ins. wide for drawer front.
Plywood for bottoms, etc., as detailed in article.

enough. It is of simple construction, as shown at (B) in Fig. 4. The sides and ends are 3 ins. wide and cut from $\frac{3}{8}$ in. thick wood.

The bottom can be of plywood,

plough plane can do the job easily, but without it a good plan is to saw the wood to the required depth for the groove with the ordinary tenon saw, using a strip of wood, cramped up against the cutting lines, as a guide. Level the bottom of the grooves with glasspaper folded round a strip of wood, to nearly fit the groove. These grooves will slide along runners, fixed to the lower rails, beneath the tray bottom.

Runners

Prepare the runners from two strips of wood, $\frac{3}{8}$ in. thick and 1 in. wide, with $\frac{1}{2}$ in. wide strips of $\frac{3}{8}$ in. fretwood screwed to them. These latter strips are the actual runners. They should be just the length to fit between the legs, as in

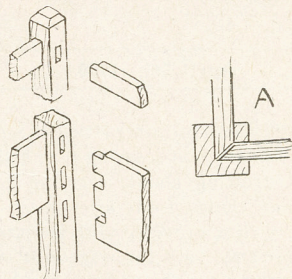


Fig. 3—Details of some joints

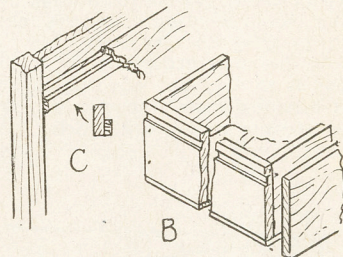


Fig. 4—The drawer and runners

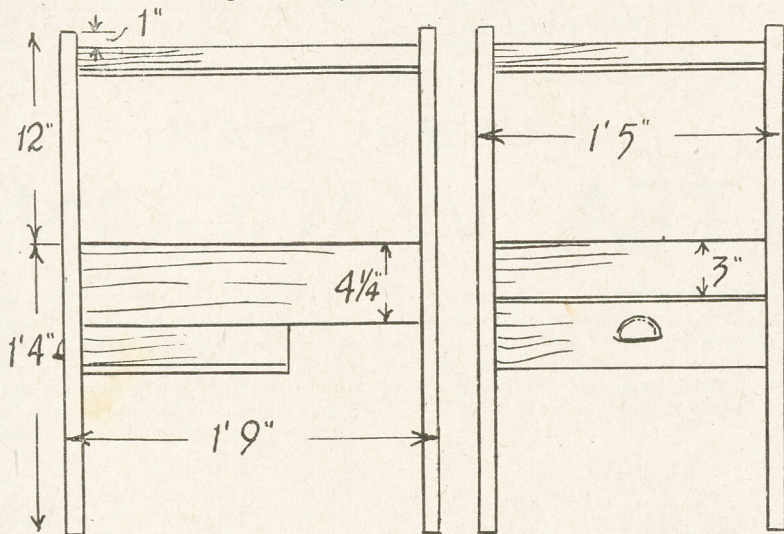


Fig. 1—Side view showing trays

Fig. 2—End view showing drawer pull

against the rails, gluing and screwing can only be done to the under edges of the end rails. This, of course, will be apparent before fixing. Make a close joint at the sides as any gap will look ugly, and also allow dust and crumbs to work through into the drawer beneath. Finish the tops of the legs by bevelling.

screwed on, or nailed and glued. Before fixing the parts of the drawer together, take the sides and cut a groove $\frac{3}{8}$ in. deep and $\frac{1}{2}$ in. wide in each, the grooves being exactly $\frac{1}{2}$ in. down from the top.

Take care in cutting the grooves to get them truly level from end to end of the drawer sides. Those readers who own a

detail (C). Fix with glue and nails, and glue the top edges, as these will butt against the bottom of the tray above and support it. Finish the drawer with a facing of $\frac{3}{8}$ in. wood, and the whole article with stain and varnish. A 'pull' for the drawer and castors for the legs will complete.

Cone Cabinet (Continued from page 3)

edges may be held together with small paper fasteners or glue.

The cone should not be made too deep or there will not be sufficient space to accommodate it. If it stands about 2 ins. high when placed on a table in a flat position this will do nicely. Its overall diameter should enable it completely to cover the cabinet cut-out when in position, the edge resting against the wood as shown in Fig. 2.

Fixing the Cone

It is possible to secure the cone directly between the locknuts, but this will prove very weak and unreliable. Two cone-shaped washers should, therefore, be made from thin tin by cutting to the shape shown in Fig. 1 and bending the edges together. A small hole is

made at the centre of each washer.

The washers are placed one inside and one outside the paper cone, holding it securely. As a final measure the locknuts, washers, and centre of the cone may be painted with varnish or glue and allowed to dry to ensure that vibration does not loosen the parts.

The strip of wood holding the unit is now screwed in such a position that the cone rests lightly against the front of the cabinet.

Results to Expect

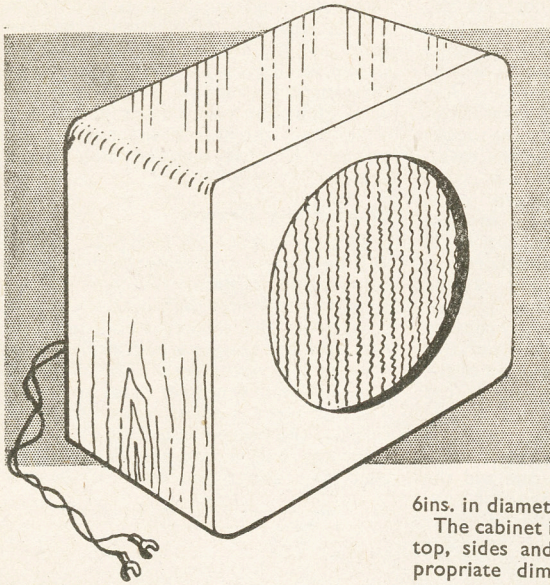
The speaker should click loudly if connected to a small dry battery. If it does not, then the windings of the bobbin or leads to the terminals should be examined.

Excellent reproduction should be

obtained from small 2 or 3 valve battery-operated receivers. The output from 1 valvers is naturally limited, but signals should be loud enough for all words to be clearly audible, and this should also be so with a good crystal set used in an area where one or more local stations are well received.

When connecting to a battery set, take the positive speaker lead to H.T. positive and negative lead to output valve anode. Do not operate the speaker for any length of time with these leads reversed or the unit may become slightly demagnetised. In the unlikely event of reproduction being unsatisfactory, examine the unit as described to assure that the cone is not forcing the armature back against the magnet poles, thus preventing vibration.

How the amateur radio constructor can make an efficient CABINET CONE SPEAKER



READY-MADE moving coil speakers are fairly expensive, but the constructor who has a small battery-operated receiver can make a suitable speaker very cheaply. Such a speaker can give good results and many listeners hearing it in action would fail to distinguish between it and a ready-made speaker. The quality of reproduction on both speech and music is good; the speaker is sensitive so that it will give quite a good output with small receivers, and it can deliver ample volume for ordinary purposes.

It is not suitable for mains-operated receivers because the windings cannot handle the heavy current taken by the output valves of such sets. But even with a mains receiver it can be used for extension purposes, coupled by means of a condenser so no direct current flows through the windings.

The Unit

The speaker is made up round a permanent magnet balanced-armature unit such as used in balanced-armature high and medium impedance headphones. This may be obtained at a very moderate price (about 2/-) from many stores, or the constructor who has an unused pair of phones to hand may adapt one of the earpieces.

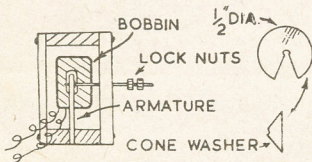


Fig. 1—The unit and cone centre

Though it would be possible to make up such a unit the cost would considerably exceed that of a ready-made unit, even if a suitable permanent magnet and other parts could be obtained. It is, therefore, best to buy this section of the speaker ready-made.

Cabinet Details

The cabinet, which is essential for proper reproduction and also serves to support the parts, can be made up from 3/4 in. thick wood, with 3-ply for the front. The front itself may be about 8 ins. by 8 ins., with a circular cut-out

6 ins. in diameter for the speaker cone.

The cabinet is about 4 ins. deep and the top, sides and bottom cut out to appropriate dimensions. In Fig. 2 the measurements given assume the use of 3/4 in. thick wood for bottom and sides, with 1/2 in. wood for the top, the pieces being so arranged that the minimum number of joints are visible.

The parts should be nailed or screwed securely together. In addition, a strip of 3/4 in. thick wood 7 ins. long and about 3 ins. wide will be required to support the speaker unit. This strip is screwed to two small blocks which are also screwed to the inside of the cabinet. Nailing or gluing is not recommended here as a little adjustment may be necessary to ensure that the cone comes right up to the cabinet front.

Cabinet Finish

After thorough glasspapering, the cabinet may be varnished, and if a good finish is obtained the final appearance of the speaker will be satisfying. If desired, four small feet (the rubber ones obtainable from the popular stores are suitable) may be added.

The inside of the circular front cut-out may be covered with a piece of thin silk or similar material, glued in place and stretched tightly. Alternatively, if the cone itself is to be made from coloured

material the finish will be quite satisfactory even if the cut-out is left uncovered. With moving-coil speakers some such covering is essential to keep dust from the speech-coil gap, but with this type of speaker this point does not arise.

Mounting the Unit

Most of the units mentioned will appear similar to Fig. 1, when removed from the case. A spindle projects from the armature, and two small lock-nuts will be used to hold the cone in place. As it is absolutely essential that the armature comes centrally between the poles of the magnet, this should be checked, and the armature bent slightly if necessary. If the armature rests against one pole reproduction will be weak and rattling may mar the results obtained.

The unit is mounted on the strip shown in Fig. 2, the armature spindle passing through a fairly large clearance hole (say, about 1/2 in. in diameter). It is fixed by two or more small bolts from the front and it should be quite secure and so arranged that the spindle does not foul the wood.

Two leads will be found issuing from the bobbin, and the polarity of these should be noted and taken to two terminals situated at any convenient point on the strip. Leads from the receiver can then come to these terminals, and this will ensure that the fine wires from the bobbin are not pulled away.

Making the Cone

It is quite easy to experiment with different materials for this, and reproduction will be influenced slightly by the thickness and stiffness of the material used. Very thin cardboard is suitable, or very stout drawing paper. The best material will be found employed as covers to some large catalogues, being a type of very stout, strong paper of a fairly pliable nature.

A circle about 7 1/2 ins. in diameter is drawn on the paper to be used and the shape is cut out. Afterwards remove a narrow segment running right to the centre and draw the edges one over the other so that a cone is formed. The

(Continued foot of page 2)

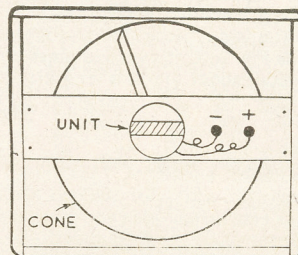


Fig. 2—Internal arrangement of the cabinet

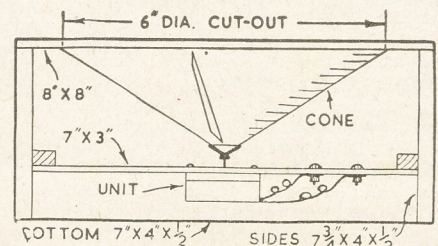
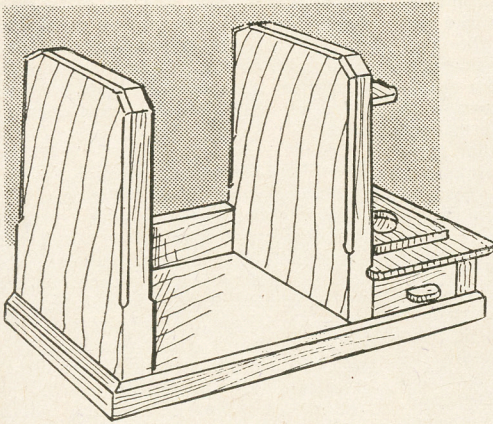


Fig. 3—Back view of speaker

Those who are neat and tidy will make this LIBRARY BOOK HOLDER



DOUBTLESS many readers enjoy the benefits of their County or Town Library, and it would be a good idea to make up the special book holder illustrated, to house them and keep the volumes separate from the home books in their possession. By so doing, no confusion arises, and the borrowed books are taken better care of than when lying about the house.

Included in this particular design of book holder are a pipe rack and a small drawer, the latter being a handy little receptacle for holding library tickets not in use at the time. For making this article it is suggested that readers use the wood from a grocer's box, if they can obtain one suitable for such purpose.

A Box for the Wood

Quite a good box is one used for imported apples, etc., as it has substantial end pieces of $\frac{3}{8}$ in. wood, and two sides of $\frac{1}{2}$ in. wood, all of a quality good enough for the work. In the absence of such a box, the article can be made from a 2ft. 6in. length of $\frac{3}{8}$ in. by 8in. deal, and two panels of $\frac{1}{4}$ in. fretwood, one 7ins. by 14ins., and the other 4ins. by 7ins.

Some of the parts of the holder are shown in Fig. 1, (A) being the base, (B) the sides of the book portion and (C) the side of the drawer portion of it. Cut the base to dimensions given, and run the smoothing plane over the surface, or give it a good rub over with glasspaper, according to the condition of the wood.

The Joints

On this mark off the three mortises shown, positioning them at the centres. Make these $1\frac{1}{2}$ ins. long and $\frac{3}{8}$ in. wide, or whatever thickness the wood may be. The mortises are not cut right through but made $\frac{3}{8}$ in. deep. They can be cut out easily enough with a sharp chisel.

Saw out the bookcase sides (B), making the tenons to suit the mortises in the base, of course. In one (the

wise.

Try these parts for fit, and if satisfactory, glue in the middle one and the short end one, leaving the other for a bit. The edges of the base should be neatly bevelled off, level with the bookcase sides, a job best done before gluing the latter in position; naturally.

Back Rail

At this stage cut a $1\frac{1}{2}$ in. wide strip of the thinner wood, for the back rail, cutting it long enough to extend between the sides. Glue the remaining sides in, and then the back rail, nailing the latter as well.

The side pieces, by the way, can be left with a square edge, but an improvement, worth the little trouble involved, is a chamfer worked along the edges, and stopped about 2ins. from the base. This is shown in the general view, and if intended to be carried out, is best done before the sides are glued in.

A top piece, to cover in the drawer opening, is cut from the thin wood to the size given in Fig. 3 (G). This is glued over and nailed where it butts against the middle side piece, or a better neater fitting obtained at this part by grooving the side piece for it, as in detail (D) in Fig. 2. Cut a second piece of the thin wood, about $\frac{1}{2}$ in. less length and width.

Bowl Rest

On this bore a pair of $1\frac{1}{4}$ in. holes through, say, 1in. apart, for the bowls of the pipes to rest in, and glue the piece to the top part (G), where shown by dotted lines, after (G) is glued in position.

For the mouthpieces of the pipes to

rest in, cut a piece of wood to size (H), in Fig. 3, this time from slightly thicker stuff, say, $\frac{3}{8}$ in. or $\frac{1}{2}$ in. Saw out the slots shown, seeing they come directly over the centres of the holes in (G) and fix it with glue and two screws about 1in. down from the top of the middle side piece. All that now remains is the drawer.

Making the Drawer

This is drawn at (E) in Fig. 2. Its size will be that of the drawer opening, of course, and its depth the same. Construction is simple but neat. Cut the front from the thicker wood, and the rest from the thinner wood, or fretwood as may be necessary. The front is rebated for the drawer sides to fit in. The end piece is cut narrower than the sides, as the bottom is to be nailed to it.

Fit the end across not quite at the back, say, about $\frac{1}{4}$ in. from it. Cut a

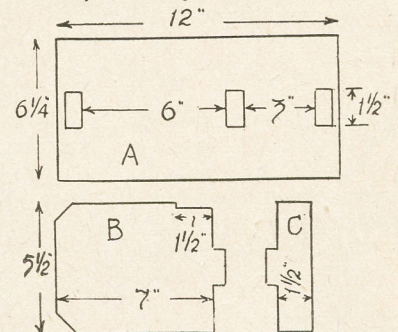


Fig. 1—Main part dimensions

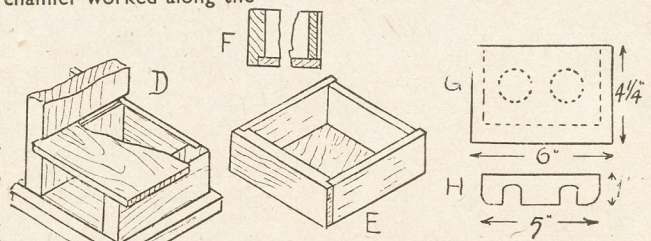


Fig. 2—The end and drawer construction

Fig. 3—The parts of the pipe holder

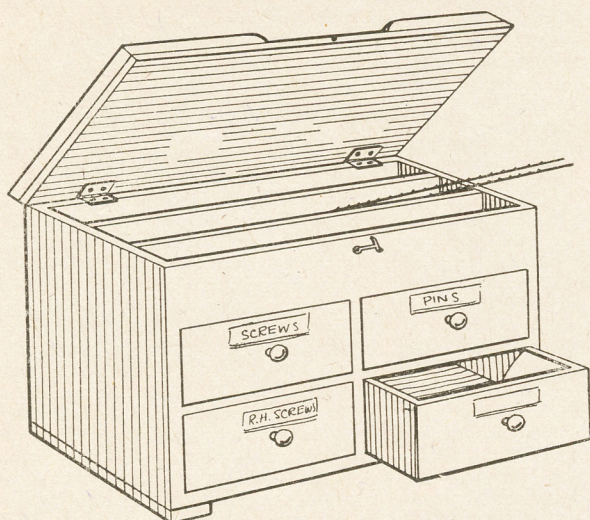
rebate in the front for the drawer bottom to fit in, and glue and nail all together. Detail (F) shows how the bottom fits in, it is all very simple.

Fit a small wood pull to the drawer front, then clean up with glasspaper and finish the work either with stain and varnish, or a pleasingly coloured enamel. With boxwood the enamel would be best.

In any case it is advisable to add two coats of paint—the first a flat grey colour to form a priming coat and allowed to harden before the second is added.

If stain is applied let get it perfectly dry before you add the varnish over it. A clear hard varnish should be applied, in a warm room.

Keep your sawblades, screws, and sundries in this USEFUL CABINET



NOW that the light evenings are approaching, many readers will, no doubt, spend a short time in the garden and then finish off with any jobs of fretwork that may be on hand. It is most annoying when only a short time is at your disposal, to find the fretsaw blades are missing, or that the particular size screws you need have been mislaid. It is to avoid this that the neat little box, shown in the illustration, has been designed.

It has shallow compartments in the top for various grades of fretsaws. Three are shown, but, of course, this depends upon the number of sizes that you use. We have provided four little drawers suitable for screws and fretpins.

Extra Partitions

If four is insufficient we suggest that you glue in a centre partition, dividing, say, two or three of the small drawers in two. Alternatively the ends of the box could be made deeper and two or even four more drawers added.

Round the edge of the lid are glued

fillets forming a tray which will be most useful for sorting odd nails or screws or for containing them when using a certain number for a particular piece of work. It will be noted in the detail in Fig. 2 that a gap has been left in the front edging fillets just mentioned.

This makes the handling simple, as the contents of the 'tray' can be easily counted and drawn forward as necessary. It may be pointed out, too, that these fillets greatly strengthen the lid, preventing it from warping.

General Assembly

The base (A), the two sides (B), and the back (C) are the first parts to cut and glue up. Take note how the sides (B) fall flush with the front edge of base (A). The front rail (D), and the drawer runners (E) and the uprights (F) are next carefully inserted. The floor (G) of the fretsaw compartment is just a plain piece with the front upright rail (H) glued on.

The partitions (I) are next cut out and glued in position. The lid is the same size as the base (A) and a detail of this is shown in Fig. 2. The inset shows the method of hinging. The hinges are first screwed to the lid, and recesses afterwards made in the

back deep enough to contain the two flaps of the hinges.

This ensures the lid fits flat and even along the top of the box. The edging fillets may be neatly mitred at the corners or they may be simply butted, as shown in the sketch.

Drawer Construction

A detail of the construction of the drawers is given in Fig. 3. The dimensions for all parts of the drawer are given 'full' which allows for rubbing down all round after gluing up, thus ensuring a good fit.

Note how the back of the drawer (L) is kept in a little way along the sides. This is for strength only—so the fret-pins which help to strengthen it are not pulled out with the weight of nails or screws behind it. Note, too, the extra strengthening piece (L) behind (M), the drawer front.

The drawers should each be glued up and glasspapered before the pins are inserted. Each drawer should be numbered during construction so it retains its original and proper place.

Finally, a hook and a pin or round-head screw should be added, the position being shown in Fig. 2. Small knobs can be added to the drawers as shown in the picture of the finished box. Feet can be added, too, if desired; they will add to the appearance considerably. They can be cut from waste wood in the form of small blocks glued to the corners or a strip can be glued the whole way along as shown.

Finishing

The whole box can be suitably coloured with two coats of quick drying enamel or simply stained and varnished. Take care that the varnish or enamel does not come in contact with the drawer sides or runners. If any is accidentally smeared on, it should be wiped off at once before it has time to dry. The addition of small neatly printed labels pasted on the drawers and saw compartments will complete this very useful little box.

One of the principal points in its construction, it should be noted, is to get the edges of all parts cut dead straight or they will not make a satisfactory joint when glued.

The small tenon saw is the best tool to ensure this, and of course pencil lines should be marked out as a guide. Use a rule or pair of dividers to test measurement.

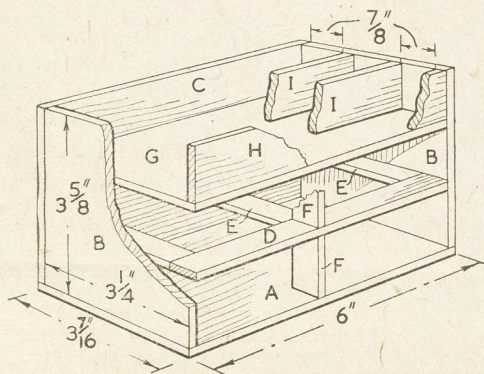


Fig. 1—Cut-away construction view of box

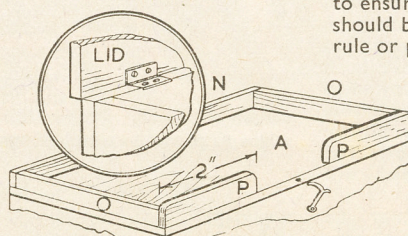


Fig. 2—Detail of tray and lid fixing

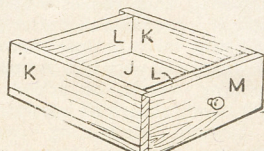


Fig. 3—Drawer construction

How a handy duplicator can be made by using A HECTOGRAPH

A HECTOGRAPH is a very convenient and dependable duplicator which is of particular value to club secretaries, schools, etc. The gelatine type of hectograph is probably superior to the paste or putty type, as it enables a considerably greater number of impressions to be taken which are also of better definition.

To make the gelatine hectograph, soak 3ozs. of pale glue in its own bulk of water until the glue is reduced to a thick and viscous jelly. This process will take upwards of twenty-four hours or so. This time, however, can be appreciably reduced by using pearl or seed glue.

The Jelly Mixture

When the glue is reduced to a jelly, gently warm and stir in 8ozs. of glycerine and 12 drops of oil of cloves to prevent the mixture from turning mouldy. After thoroughly stirring, the mixture should be poured into a shallow dish or tray, approximately 12ins. square by $\frac{1}{2}$ in. deep and placed on a level surface to set.

It is probable that when the mixture is set, many air-bubbles will be evident upon the surface. In this case, the surface should be lightly rubbed over with a damp cloth until the bubbles are removed, and gently reheated until the mixture becomes fluid. It is then placed aside to set.

In Use

To operate the hectograph, the surface is lightly rubbed over with a damp sponge or cloth and the written master sheet gently applied. The master sheet must be gently rubbed from the centre outwards to ensure perfect contact with the hectograph surface, and left in position for a few minutes. When the sheet is removed, an exact impression in reverse will be found upon the glue surface.

Copies are made by placing sheets of paper on the hectograph surface, gently rubbing with the hand, then carefully removing. A considerable number of copies can be made, and as the work proceeds the paper should be left progressively longer in contact with the hectograph surface, to ensure uniform impressions.

Cleaning the Jelly

When sufficient copies have been made, the surface of the hectograph should be cleaned with warm water and a sponge until all imprints have been removed, then remelted and allowed to set. It is probable that after considerable use the mixture may become slightly impregnated with ink. A little powdered whiting should be added which will effectively absorb all ink stains.

Suitable duplicating ink may be obtained from stationery stores, etc., but if the reader prefers to make his

own, the following formula is very suitable. $1\frac{1}{2}$ ozs. of methylated spirit, 2 $\frac{1}{2}$ ozs. water and 3 $\frac{1}{2}$ ozs. of pure glycerine are warmed and $\frac{1}{2}$ oz. of methyl green added. The mixture is stirred until thoroughly amalgamated, then is stored for future use in a tightly corked bottle.

Another Form

Another convenient form of hectograph duplicator can be made by reducing 2ozs. of pure gelatine to a jelly with the addition of a little cold water, then adding 4ozs. of glycerine and 2ozs. of water which has been previously warmed. The admixture is then thoroughly stirred and six drops of oil of cloves added for preservative properties.

While still warm, the mixture is very liberally applied to one side of a sheet of duplicating paper which is then placed aside to dry. Duplication is carried out by laying the prepared sheet on a level surface, slightly dampening the surface of same with a sponge, then pressing the master sheet in contact to take the

impression. After a few minutes, the master sheet is removed, and duplication is carried out in the normal way.

Dampen Paper

It is advisable, however, to dampen slightly the copy paper before duplicating, as this enables clearer copies to be made. The duplicated sheets should be placed aside on a level surface to dry out before being used.

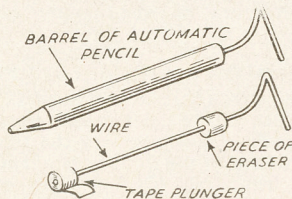
In this system of hectograph duplicating, the prepared surface of the paper cannot be renewed after use and must be thrown away. This method of duplication, although extremely convenient, is not so reliable as the glue type previously described, and the number of copies that can be made is strictly limited, due to the extreme thinness of the prepared surface.

When the master sheet has been written, the pen should be well washed in warm water to remove any surplus ink which may otherwise dry and clog the nib.

Handyman Hints and Tips

A Grease Gun

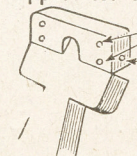
THE barrel from an automatic pencil can be made into a small size grease gun, suitable for lubricating delicate



machinery or models. A plunger is made by wrapping a stiff piece of wire with friction tape to the correct diameter and the illustrations show how the whole thing is completed.

Stand Frame Support

HERE is a simple tip which may be useful to those who want to make a support for a stand frame or picture.



Take two pieces of wood — one $\frac{1}{2}$ in. by $\frac{1}{2}$ in., and the other $\frac{1}{2}$ in. by the required length and cut and fit them as shown in sketch. Pin carefully through edges to provide a simple hinge.

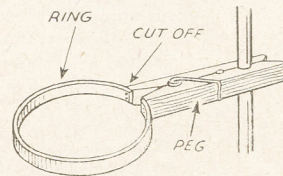
Fretmachine Tip

WHEN using a fretmachine in a shed or garage which has a concrete

floor, it is difficult to fix it to the floor. Consequently, it slips when one is treadling. To avoid this, tie a piece of rope to one leg of the machine, pass it behind your stool or chair, and fix to the other end a strong wire hook and hook it round the other leg. It then prevents the machine from moving when working.

Chemistry Apparatus

IN making improvised chemistry apparatus, it is sometimes necessary to have a ring on your stand. Those



made of tinplate from meat paste jars do very well if fixed to a clothes peg. Cut off about $\frac{1}{4}$ in. of one end and open out the big clip at right angles to the ring. Clip this in and add glue if necessary.

Tinning An Iron

UNLESS the tip of the soldering iron is coated with a silvery covering of solder, it will not solder properly. To tin it, it should be got red hot and put on a stone, such as a doorstep, and each of the faces filed. Then heat again and dip into some Fluxite and stroke the tip with a stick of solder. An evenly applied thin deposit which reaches to about 1in. from the tip is required.

How to undertake glazing and GLASS CUTTING

AN elementary knowledge of glass cutting and glazing is extremely useful to every householder. Replacements can be made at a small fraction of the cost of having the work done by a professional glazier and, what is often of greater importance, there is no inconvenient and possibly disastrous delay.

Sold by Weight

Sheet glass is produced by a rolling process. Different thicknesses are made and are known by their weight in ounces per square foot—15ozs. to 21ozs. being the most common. The price, of course, varies with the quality and the thickness of the glass.

For domestic use, 'window' glass is required, but for greenhouses, cold frames, etc., 'horticultural' glass can be substituted, as it is considerably cheaper and is quite satisfactory.

Cutting

Glass can be cut with a glazier's diamond or, alternatively, with a wheel-type glass cutter. A diamond is the best of all, but a reliable wheel glass cutter is quite good enough for all ordinary work. Typical examples of the two types are shown in Fig. 1.

The glass, if being puttied in place, should be cut $\frac{1}{16}$ in. shorter and $\frac{1}{16}$ in. narrower than the space into which it is to be fixed. This is to allow room for it

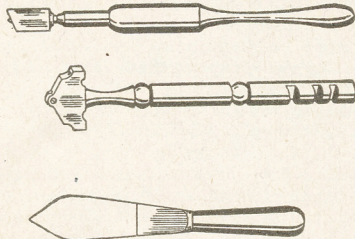


Fig. 1—Two types of glass cutter and a putty knife

to be bedded down in the putty, since, if it is too tight, it will crack.

Successful glass cutting is largely a question of knack and confidence which can soon be acquired if a little practice is obtained by first cutting up some odd scraps of glass.

Marking the Cut

The novice will probably find it an advantage to mark the position of his cut on the glass with a piece of chalk and then to use a straightedge as a guide for the glass cutter. It will not be necessary to draw a line but only to make a mark at each end and place the straightedge on the two marks.

The method of holding a glass-cutter is shown in Fig. 2. The cutter should be pressed on to the glass just sufficiently hard to make it 'bite' on the surface and

then the cut made. On no account should a second cut be made over the first one because, if the two cuts coincide, it will tend to take the edge off the glass-cutter and, if they do not, the glass will nearly always break away from the line.

When the cut has been made the glass should be held as shown in Fig. 3 and

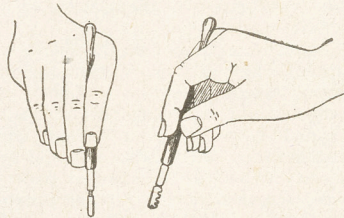


Fig. 2—How to hold the cutter

then a slight upward pressure exerted by the fingers. This will result in the glass breaking along the cut line.

Glazing

If a broken pane is being replaced the first job will be to remove all the broken glass and then all the old putty.

The new putty must be worked up

well, in order to break down any lumps, and then a strip of it pressed into the rebate where the glass is being fitted. Next the glass is gradually pressed into place and a glazier's sprig, or a small brad, driven into the side re-

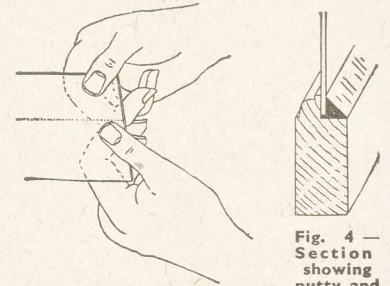


Fig. 3—Breaking the glass

bates to hold the glass firmly in position.

A strip of putty should now be rolled up in the hands and pressed into the corner where the glass meets the frame on the outside. The surface of the putty is then bevelled off with a putty knife. A diagram showing a putty knife is in Fig. 1 and the glass puttied in place is shown in Fig. 4.

Fig. 4—Section showing putty and glass

More Home-Made Cements

Self-adhesive Tape Dressing

TAPE may be made adhesive for surgical or other purposes by dressing the surface with a mixture of litharge 1 part, lard 1 part, olive oil 1 part and water 2 parts. Alternatively lead acetate 6 parts and soft soap 10 parts, with sufficient water may be used. To either of the above recipes 4 parts of crushed rosin may be added if desired, but it must first be solved in either alcohol, methylated spirits, ether, oil of turpentine or hot olive oil. It could be first dissolved in the olive oil which forms one ingredient of the first recipe above before the complete mixture is made up.

Cellophane Gum

ORINARY adhesives are not permanently satisfactory when used for sticking cellophane sheet, but if an adhesive is made up of 2 parts of gum arabic dissolved in 5 parts of water, and a further 3 parts of glycerine added to the mixture, a strong and permanent joint can be made with its use.

Good Office or Domestic Paste

DISSOLVE 1 teaspoonful of powdered Alum (aluminium sulphate) in 1 quart of cold water and stir in enough wheat flour to make a thick even cream; finally stirring in a teaspoonful of finely-powdered rosin and adding a

cupful of boiling water. Give a good final stirring, pour into a wide-mouthed bottle and add a few drops of oil of cloves to stop mouldiness occurring.

Quick-drying Paste

A GOOD all-round paste with quick-drying qualities may be made easily by either mixing 100 parts of wheat flour paste with 5 parts of dextrine ('British gum'), or by mixing equal parts of flour paste and scotch glue.

Bill-posters' Paste

FORMULA No. 1. Half a quartern of wheat or rye flour is beaten with a little cold water, and into the paste so formed, boiling water is slowly added, stirring and crushing the lumps meanwhile. A tablespoonful of powdered alum should then be added to act as a preservative. Cold water may be added as required to thin the paste.

Formula No. 2. Powdered gum tragacanth made into a paste with water in the proportions of 1 part tragacanth to 10 parts water, makes a paste which may also be thinned with cold water.

Formula No. 3. A concentrated bill-poster's paste may be made by mixing a little common starch with 5 or 6 times its weight of boiling water, stirring vigorously till it forms a thick jelly. This may be thinned with a little warm water if necessary.

The summer months are ideal for overhauling the HOUSE WATER SYSTEM

LAST summer when visiting a friend the writer stayed for a few days at his house and found the water system was in a depressing state of disrepair. Taps dripped and whistled even when fully turned off, wash basins emptied painfully slowly, and overflow pipes spouted at frequent intervals. This state of affairs must have been going on for months, but it took only a short time to put the system in order again.

If your taps drip, it is a sign that new washers are needed. Get a supply of these from a hardware store and specify whether they are for hot or cold water taps. Different sizes of taps need different sized washers, so lay in an assortment of sizes.

Off at the Main

Turn off the water at the main, and turn 'on' the tap to its fullest extent. If the tap has an outer hood or cover, remove this first. If it will not unscrew by hand, use a wrench or pair of pliers, but protect the metal from damage with a piece of wood or leather.

Lift up this cover, and underneath you will see a hexagonal nut. Unscrew this with a spanner, holding the nozzle of the tap firmly with your free hand. Unscrew the spindle completely and you will see the loose 'jumper', to which is attached the washer. The jumper fits into a recess at the bottom of the spindle. The washer of a leaky tap will be badly worn. Remove it by unscrewing the nut underneath, and replace it with a new washer of suitable size, enlarging the centre hole if necessary.

On some types of jumper the washer cannot be replaced like this, and the

whole jumper must be renewed, but the assembly only costs a small sum.

The operation of re-washing a hot-water tap is similar, but in most houses there is no easy way of stopping the flow of water through the tap. The pressure in the taps, however, is not great, and you can prevent any splashing by covering the tap with a cloth while unscrewing the spindle. Do the job when the water in the cistern is not very warm.

Should water squirt up the side of the spindle when a tap is running, the packing needs attention. Above the hexagonal nut on the spindle there is a rounded collar with a milled edge. Unscrew this. Inside, there should be a quantity of soft string used as packing, so replace this, or add further packing. Rub the string with Vaseline and wind it round the spindle, ramming it down into the cavity.

Overflow pipes which spurt water when they should not, tell you that there is trouble in the ball-float mechanism in the cistern. The idea of this float is to cut off the flow of water when it has reached a certain height in the tank. Try bending down slightly the arm which holds the float: this will ensure a quicker cut-off.

A Punctured Float

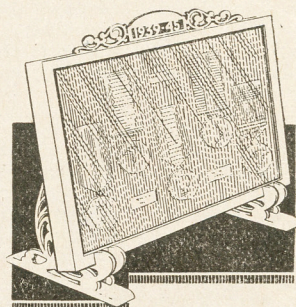
Should this fail, the trouble may be a punctured float. Unscrew it and shake it to test if there is water inside. If so, locate the puncture, enlarge the hole slightly to remove the water, and solder up. Renew the float if it is extensively damaged.

If water will not drain away quickly from the wash bowl or sink, examine the top of the waste pipe for debris, and

remove this with a knitting needle or nail. Pipes which have an S bend often become clogged at this point. There is usually a screw plug at the bend. Place a bucket or bowl underneath, and unscrew this plug. The offending debris should fall out, but it may require helping with a long piece of wire.

Design for a Medal Holder

Complete Kit (No. 2840) is supplied for the Medal Holder Design with this issue for 6/5 at any Hobbies Branch, or 7/2 from Hobbies Ltd., Dereham, Norfolk.



If water drips from the screw plug when fully tightened, cut a new washer from a piece of leather or rubber. If waste-pipe plugs do not keep water from leaking away, replace them. Measure the diameter of the plug hole with a tape measure, and ask for that size of plug.

Sometimes the S hooks at either end of the chain attaching the plug to the bath or bowl become opened out, and so becomes detached. Pinch the opened ends a little closer with pliers or pincers.

Hot Water Leakage

Much fuel is wasted if heat is allowed to leak from the hot water system. Bind all hot water pipes with felt or sacking to keep in the heat. Stop up any air leaks from the cistern cupboard with felt or putty. Stuff sacks between the cistern and the wall to provide insulation, but do not use old woollen clothes, as these harbour moths.

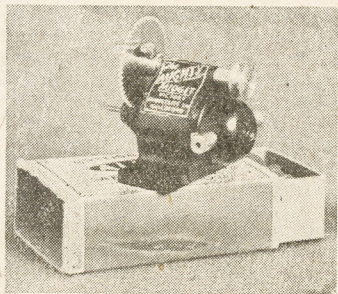
Perhaps you have had some bursts this winter. Bursts are caused by the freezing of the water in the pipe. When water freezes it expands suddenly and makes the pipe crack open. It is not until the thaw sets in that water flows out through the crack.

Prevention is much better than cure. Cover your pipes where possible with felt, sacking or straw, so that bursts are reduced to a minimum in the hard frosts of the winter. Everyone seems to want a plumber at the same time!

A Useful Motor for Models

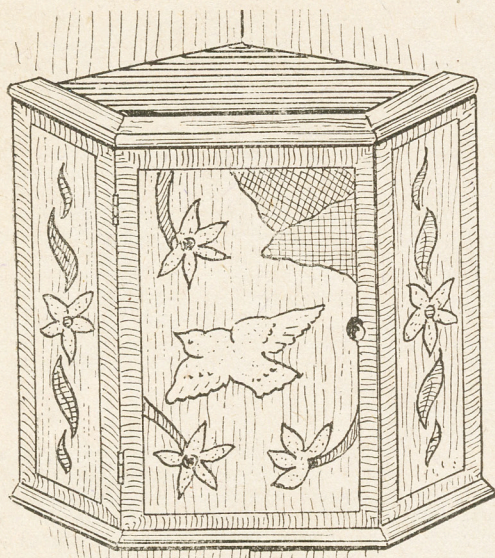
WE have recently been pleased to test the little motor shown here and can recommend it for attaching to small models, particularly as it requires nothing more than a No. 8 battery for its source of current.

The efficiency of an electric motor is dependent on the proportion of the electrical energy put into it which is wasted by friction, windage and electrical and magnetic losses. For very small motors the efficiency rapidly decreases with the size, and the chief reason for this has been found to be the rapid increase of 'iron losses' with increasing speed. This position has been tackled in a radical manner by the inventors of the 'Mighty Midget' Motor, whose design incorporates no rapidly revolving iron parts.



In this design the armature windings are made upon a hollow cylindrical plastic former, which is firmly mounted on a small gauge steel spindle, and within the former a soft iron core is mounted on the spindle in such a way that it is free to revolve. In practice, when current is passing through the motor, the windings and spindle revolve rapidly, while the 'floating core' revolves very much more slowly. There are thus no 'iron losses'. The motor is totally enclosed in a neat plastic case, the drive being normally applied from a small pinion on the spindle to a large brass gear-wheel which, with a 61 to 1 reduction, gives a practical final driving speed. The firm offering this motor has appeared in our advertising pages or can be obtained on request.

Carpentry and marquetry combine to make an attractive CORNER CUPBOARD



A NICE neat little cupboard this, just the thing for storing small articles out of the way, medicine bottles, and such like things. It is primarily intended for a display of simple marquetry decoration, but can just as well be made plain, and be subsequently stained and polished.

The general construction is plainly shown in Fig. 1. The carcase is made up of $\frac{3}{8}$ in. thick deal, with $\frac{1}{4}$ in. thick better class wood for side panels and door. Fretwood will do for the latter parts, especially if the marquetry decoration is to be used, as deal is not suitable as a foundation for the craft.

The Carcase

Get out the sides of the cupboard, making one $6\frac{3}{8}$ ins. and the other $6\frac{3}{4}$ ins., as in plan, Fig. 2. Glue and nail these parts at rightangles, as shown by the dotted lines in plan. To set out the top and bottom parts of the cupboard, cut two $6\frac{3}{4}$ in. squares of the deal, and saw across to make the shape given in Fig. 2. Glue these to the sides.

The addition of a small shelf, as seen in Fig. 1, is entirely optional. Such a shelf can be useful, but should not occupy too much of the space if the cupboard is intended for medicine, or there may be insufficient room for them to stand upright.

Two front side panels and a door will now be needed. These should be cut from the $\frac{1}{4}$ in. fretwood mentioned. The side ones are cut 3 ins. wide, and the door $6\frac{3}{4}$ ins. wide, heights the same as the cupboard. Fit the panels with

round-headed screws at top and bottom (one is shown in position at (A) in Fig. 1) only for subsequent easy removal.

The inner edges of the panels should be planed to an angle of $67\frac{1}{2}$ degrees (see Fig. 3 (C)) and be fitted to the flat side parts of top and bottom pieces of the cupboard. There will probably be a little surplus to be planed off the outer edges of the panels afterwards to make them level with the sides.

The side edges of the door are similarly bevelled, and should be planed a nice, but not too close fit between. The door can now be neatly hinged, using $\frac{3}{4}$ in. by $\frac{1}{4}$ in. brass hinges.

A strip of the deal 1 in. wide should be bevelled at one edge, and cut into three pieces to form a cornice at the top of the cupboard. These should be accurately joined at the angles, as at (C) in Fig. 3, and overhang the edges by $\frac{1}{8}$ in., as in detail (B). Glue and nail in position. Similar strips are also fitted to the bottom of the cupboard, but the edges of these, instead of being bevelled, are neatly rounded off.

Plain Sides

If the marquetry decoration referred to is not desired, the side panels are removed, the edges touching the sides, and top and bottom of the cupboard glued, and then rescrewed in place. The work needs a thorough glasspapering, and then can be stained and polished. A small cupboard catch is fitted, and a pair of the brass wall plates screwed to the back of the cupboard, for hanging it in position.

For marquetry decoration, the panels and door are removed. A simple design for these is given at Fig. 4 drawn over 1 in. squares. Copy these full size on thin white paper. Now a word about the design. The absence of intricate scrolls and curves may be noticed, but it should be mentioned at once that these have been purposely omitted, as such

delicate work is fit only for the more practical hand at the craft.

Marquetry Work

This marquetry is intended for the beginner, who having read the preceding articles on the subject thinks he would like to make something useful as a start. In the articles mentioned all the necessary information for carrying out the work has already been detailed and, therefore, needs no repetition here.

Readers must choose their own selection of wood for cutting, as it is useless nowadays to say that each portion must be cut in mahogany, others in walnut, and so on. Use must be made of whatever variety of veneers the reader may be able to get together.

The side panels, when decorated, should be put under pressure straight away, and when finished, screwed and glued in position at once, in case they warp. The door should be veneered on its inner surface as well as its outer one, to keep it flat. When preparing the wood for gluing the marquetry on, tooth the inner surface of the door at the same time. Before applying the marquetry, cut a sheet of veneer to the size of the door, and lay it ready to hand.

Directly the marquetry is laid, turn the door over and glue the back, then lay the veneer on and cramp up the

(Continued foot of page 10)

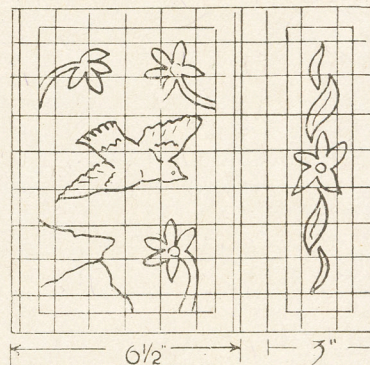


Fig. 4—Decoration for the inlaid marquetry

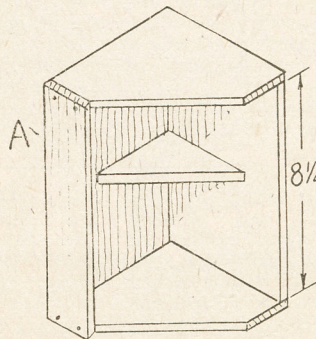


Fig. 1—Cupboard construction

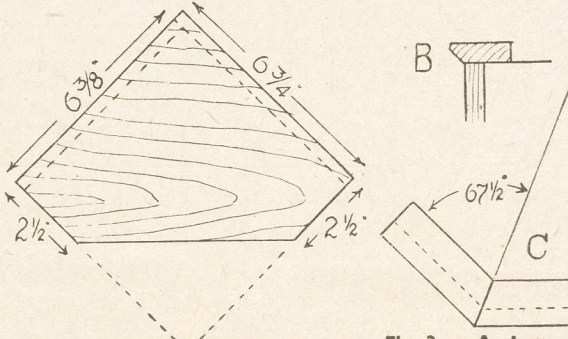


Fig. 2—Shape of top and bottom

Fig. 3—Angle and chamfer of edging

Training and preparation are needed to enjoy HIKING PLEASURES

MANY readers will now be looking forward to the spring, with its longer and brighter days, and its opportunities for getting out-of-doors. Of recent years hiking has become increasingly popular, which is not surprising, for it is good fun. There is no happier or more interesting way of spending a week-end than tramping.

Longer holidays, as Easter, Whitsuntide and Summer, come into the scheme—a scheme worth considering; for in no other form of week-ending or holidaying do you get such big value for so little cash.

How to Begin

This hiking, however, must be trained for if you are to obtain the best out of it. You cannot expect to walk away on a cross-country ramble or a week-end among the hills, straight from an office desk or an indoor job. It just does not make sense. Walking over footpaths and moorland tracks, rough and stony, is different to the city pavements, or hopping a 'bus.

Therefore, having taken a wise decision to do a lot of hiking this year, get prepared. Start easy by taking short walks around home. If living in a town, get a 'bus out into the country, and with the aid of a local map, make a sort of circular route for a few miles and back to the bus stop again.

Extend the mileage as you gain your walking legs, and your muscles get limbered up. This way you harden yourself and in time find no difficulty in doing twenty or even thirty miles in a day.

Think of your Feet

You can not avoid thinking of your feet, even if you try not to do so, for the hiker travels on his own 'under standings'. Feet must be kept in condition, therefore the question of boots and shoes suitable for the job is an important one.

Nailed boots are recommended, with stout leather soles studded with treble hob nails. See your special hiking footwear are a good fit, and comfortable. Get them broken in before undertaking a long tour. Keep boots—and shoes, if you prefer the latter—soft and easy by oiling them or giving them a good soaking with dubbin, well rubbed in the leather.

This will render them easy to wear and also make them waterproof, for you may have to splash through rivulets, negotiate boggy hollows, or tramp home in the rain. Potholes, ruts, and hollows hold the water after rain, and they cannot always be avoided. Therefore, sound footwear is essential.

Whilst in training—and after—always inspect your feet at the end of the day. If you discover tender spots or blisters, treat them with a little boric ointment. A good notion is to rub Vaseline over your toes and heels prior to putting on your socks or stockings.

Another preventative is to smear the inside of the feet of same with plain yellow soap, wetted. Watch out for any corns, and treat them with one of the various mediums sold by the chemist.

A Steady Pace

Keep to a steady pace, especially in hilly surroundings. Do not start off with a rush, and do not take too many short rests. When you feel you are really in need of a breather park yourself for twenty minutes or half-an-hour. Take longer for your lunch break.

When crossing moors keep to the tracks and paths, even if they are not the shortest cut. The longest way round is frequently the easiest and quickest. That short cut across a stretch of moorland is often the more tiring and takes you longer to do by the time you have negotiated patches of bog or skirted rocks and found a spot where you can wade some burn or beck.

If you have to descend a steep slope, it is better to zig-zag down it than to make a bee-line down. The same applies to going up as well. Watch your step where the ground is littered with stones and boulders, or rutted with potholes.

Maps

Part of your training will consist of learning to use a map. Buy the Ordnance Survey Maps with scale of one inch to one mile, and study same carefully. Important to note is the scale, which, of course, helps you to gauge the mileage from place to place. In the margin of an O.S. sheet the scale is drawn for us—five miles of it—so that we fix it firmly in our minds, and can roughly estimate by eye the distance between any two points on the map.

Brown lines running all over the map denote the contours, and connect all

points of the same height. They are shown at distances, which, between the separate lines, denote every 50ft. of height. The closer these brown contour lines the steeper the ground; where they are widely spaced the slopes are gentle.

Therefore from examining these lines you get an idea of the kind of ground you will have to cover on your hike. With a little practice you can quickly obtain a knowledge of the type of countryside by simply glancing at the contour lines.

Study your maps, and learn how to use them to advantage before you set off on a long walking tour in strange country. The map is the hiker's companion and guide.

The Compass

Another thing you may find useful as you develop your hiking stunts is a compass. Here again, you need to gain a little knowledge in its use before committing yourself to a wide stretch of moorland or hill country. If you are not sure of the route you must take, a compass will help you considerably. Should you get lost a compass will prove a friend indeed.

Practise the art of recognising the landscape on the map, and then with the aid of the compass check your position with landmarks around you. When crossing a moor it is wise at the start to note such landmarks as the nearest village or hamlet, farmstead, or keeper's cottage.

Then, should a mist come down you will know which way to turn to seek shelter. But even a compass is little help in a thick Scotch mist, which is always dreaded by wayfarers out upon the moors or mountains. Practice with map and compass during your training period is to be recommended. It will not be time wasted.

During this probationary period—before you set off on your first long hikes—learn all you can. The best kind of clothing; the handiest rucksack or haversack; whether you can travel better with the aid of a stick; map-reading, etc. All these must be thought about and tried out. Then, when the great day comes, you can set out on your journey with full confidence.

The warm weather of summer has not yet arrived, so you must be clothed accordingly at present to prevent colds or chills.

Corner Cupboard—(Continued from page 9)

door in the press at once. Leave for at least 24 hours before removing from the press.

Glasspaper the edges of the door to make it an easy fit in its opening, and it will be as well to lightly glasspaper the sharp edges of the veneer, in case they

catch as the door is opened or shut, and so tend to splinter or break away.

Finish the work with putting in such lines and marks as the design may necessitate, waterproof drawing ink would do for this, then polish the whole surface, outer surface, of course, with a

clear polish, or apply two coats of copal varnish to finish off. A thin coat of size can be painted over beforehand. This will help to fill the grain of the wood, and prevent the ink used to mark the details from running.

How the amateur photographer can make and operate A FLASHGUN UNIT

MANY amateur photographers are under the impression that flash-bulb photography is the prerogative of professionals, and that lack of skill, complexity of apparatus and cost, preclude this particular branch of photography from the amateur.

Nothing could, of course, be further from the truth. Indeed, under certain conditions, flash-bulb photography gives more assured and dependable results than natural light, due to the consistency of the light actinism. This is especially so when photography is attempted in dull and unfavourable conditions, when the result is often foredoomed to failure.

With the aid of the flash-gun, however, one is independent of the source

easily plugged into the sockets provided in the front of the camera.

To adapt the box camera for flash-gun operation is quite simple. A glance at Fig. 1 shows the arrangement to complete the electrical circuit. The two wires (A and B) are connected respectively to a non-movable part of the shutter (C) and to a simple brass contact (D). Fig. 3 A shows the shape and position of the contact. When the shutter trigger (Fig. 3 B) is depressed in taking the photograph, electrical contact is made, which ignites the flash-bulb in its holder. (Fig. 3 C) shows the trigger at rest at the limit of its travel.

Connections

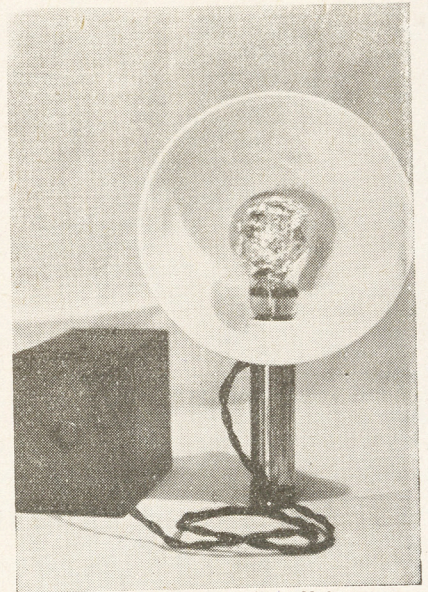
To enable the necessary connections to be made, the front part of the camera will have to be removed. With most box cameras this is not very difficult, as it merely means the removal of a few screws or nails and carefully lifting the front out of position.

The brass contact, Fig. 1 D is constructed from thin springy brass and is screwed into position with one or two small brass screws. The correct position is approximately midway between the extreme limits of travel of the trigger, but it is best to check for the correct position as follows.

Slowly depress the trigger, stopping any further travel immediately the shutter actuates. The contact should then be screwed into position, just making contact with the trigger in the position indicated.

If the action of the shutter is sluggish, it may well be that the position of the trigger is considerably past the midway position before the shutter actuates. In this case, when taking flash photographs, it must be remembered to only depress the trigger. The upward movement would fire the flash-bulb too early to be effective.

Two wander-plug sockets are fitted into the front end of the camera and the



The Complete Flashgun Unit

connecting wires (A and B, Fig. 1) are attached to them. The camera front is then carefully refixed, observing that the connecting wires do not foul or obstruct the shutter mechanism in any way.

The Torch Needed

A fairly large tubular pattern torch is next required, and a $\frac{3}{8}$ in. hole drilled in the casing as near the reflector as possible. A length of heavy flex is required, and one end is pulled through the hole and secured against any accidental pulling by making a knot on the inside. Leave about 2 ins. of free end to make the necessary connection.

One wire is then soldered to the underside of the reflector, and the other to a convenient part of the torch casing (Fig. 2 A). Two wander plugs are then connected to the other end of the flex.

The glass is removed from the front part of the torch and an old motor headlamp reflector is obtained (Fig. 2 B).

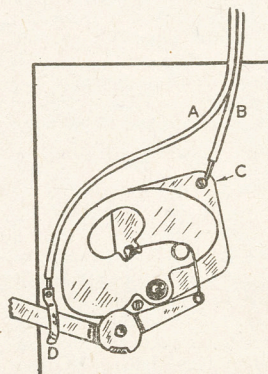


Fig. 1—The electrical circuit

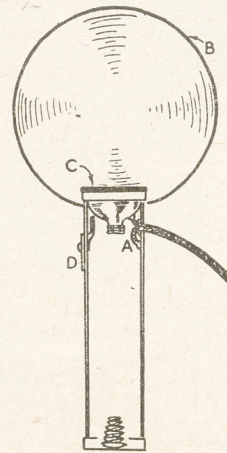
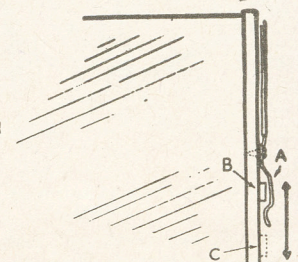


Fig. 2—Section of torch case



SIDE OF CAMERA

Fig. 3—Side view of parts



Taken with the unit, screened light, and portrait attachment

and quality of the existing light, while a further and valued advantage is that the operator can direct the flash-gun to the best advantage.

Flash-bulbs are absolutely safe and dependable in action and for this reason are to be preferred to the use of flash-light powder, especially when indoor photography is attempted. A commercial flash-gun is a fairly expensive component, however, and its price may be a deterrent to the average amateur photographer. The total cost of the unit described is very modest, indeed. The design is both simple and foolproof and will afford its user many interesting and unusual photographs.

Camera Adaption

Although the following article deals with the conversion of a simple film box camera to flash-gun synchronisation, the actual flash-gun unit can be operated manually with any camera. As many modern cameras are fitted with integral flash mechanism, the unit can be quite

A suitable reflector can be obtained at a nominal cost from any car-breaker's yard. The external diameter of the torch should be measured, a suitably-sized hole drilled in the reflector and the torch soldered into position.

Should the reflector be in a poor condition, as is likely, two or three coats of good quality white enamel can be applied to the interior. A pleasing and effective appearance can also be had by enamelling the exterior a pastel green.

A thin strip of insulating tape should be applied around the rim of the torch front (Fig. 2 C) to prevent a metal-to-metal contact being accidentally made with the flash-bulb socket whilst being screwed into position. Should this occur, the lamp will be prematurely fired, due to the completion of the circuit. The torch switch (Fig. 2 D) is left intact for manual operation when required.

The type of flash-bulb that is required is a M.E.S. or Miniature Edison Screw, which has the same screw fitting as that of an ordinary torch bulb. The 'baby' size of flash-bulb will be powerful enough for all ordinary photographs,

such as indoor work and close-ups, etc., but for more ambitious work demanding a stronger source of light, the normal size bulb will be found satisfactory in every way.

When taking 'close-ups' there is a possibility of overexposure occurring due to the intense and concentrated nature of the light. This can be countered by stopping-down the camera, or by placing the flash-gun at a little distance from the subject, or by a combination of both. If an overexposure has occurred, one can, of course, always use a chemical reducer to correct matters, but it is best to take a little trouble to obtain the correct exposure.

To operate the flash-gun, a normal torch battery is inserted in the torch case, and the flash-bulb screwed into position. The wander-plugs should be placed in their sockets prior to the screwing in of the bulb, as otherwise, should they make accidental contact together, the circuit will be completed and the bulb prematurely discharged. The flash-gun may be held in the hand or placed upon a level surface.

The disadvantage of holding the flash-gun in the hand is that the light is all frontal, and tends to give the photograph a flatness, which can be observed in many press photographs. Therefore, if possible, and the length of flex permits, place the flash-gun slightly on the side of the subject. In this way, dull or flat photographs are avoided.

Another failing of flash-bulb photography is the staring eyes and the casting of deep contrasty shadows in portraiture. This can be overcome by suspending a muslin sheet between the flash and the sitter.

When using the flash-gun, it must be correctly positioned, the subject aligned in the view-finder, then the shutter depressed in a decisive movement. Upon the action of the shutter, an intense momentary flash of light will occur, and the proposed photograph will be taken.

The fitting of the synchroniser does not in any way prevent the camera from being normally used, as this can be effected by the removal of the flash-gun connecting plugs.

The home handyman should know the possibility of RENEWING SASH CORDS

READERS who have the sliding sash type of window in their houses will, sooner or later, be confronted with the problem of a broken sash cord. The replacement of a broken cord is not at all difficult if the method described here is followed. It may seem a little awkward on the first occasion,

is, should be removed. The bead is only held in place by brads and can be levered out with the aid of a screwdriver or a narrow chisel. When this bead is out the sash can be removed from the window frame.

The Bead Edge

In some examples of this type of window the bottom sash is kept in place by a bead screwed flat on to the window frame. In this case, the bead on the same side as the broken cord will have to be unscrewed in order to remove the sash.

It will now be seen that the sash cord is nailed in a shallow groove cut in the upper part of the sash and the broken end must next be removed from the groove.

In the side of the window frame is an opening, termed a 'pocket'. This opening is filled with a long strip of wood, nearly as wide as the groove in which the sash slides, and is simply made a tight fit so that it can easily be levered out with the aid of a chisel.

After the strip has been removed the top of the weight will be visible and this should now be taken out and the broken cord removed.

Fixing the New Cord

First of all the new cord must be fitted in the window frame. A simple way of doing this is to tie a small piece of chain or a tiny scrap of lead to a piece of string and then to pass this over the pulley at the top of the frame.

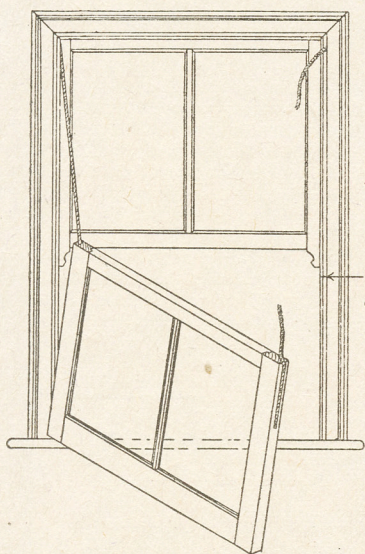
The weight will be sufficient to take the string down the inside of the window frame and, once it is in place,

the end of the string can be tied to the new sash cord and the cord pulled into place, starting from the top and bringing it out through the pocket at the bottom.

The lower end of the cord must next be tied to the weight, the weight replaced in the frame, and then the strip of wood put back in the opening.

The cord must now be cut to the correct length. This can be found by pulling the weight nearly to the top of the frame and then cutting the cord about 9ins. below the lower rail of the top sash.

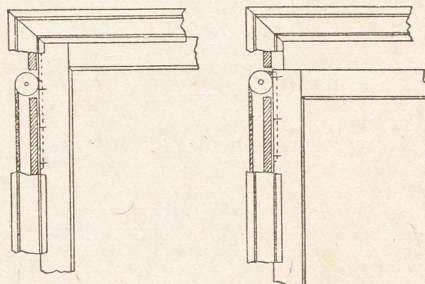
The end of the cord is next put in the groove in the sash and nailed in place similarly to the one that was previously



Bottom sash removed to reveal right-hand pocket

but such experience will make further attempts quite straightforward.

First of all the bead on the side of the window frame, where the broken cord

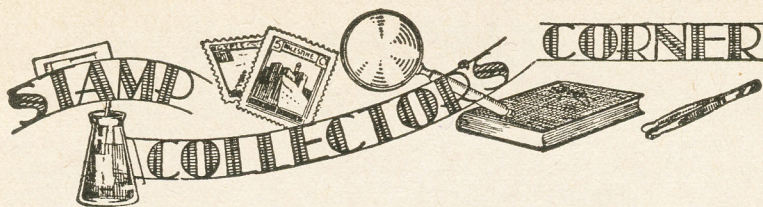


Correct position of cord on a top sash

Result of fixing the cord too tight

removed. The sash can now be put back in the window frame and the bead again fixed in the groove so as to keep the sash in place.

If the broken cord is attached to the top sash it will be necessary to first remove the lower sash, then the bead between the two sashes, and proceed as just described.



WHAT YOU SHOULD OMIT

ONE of the most difficult things that the beginner—or the old collector either for that matter—has to do is to exclude items which appear to be stamps but which are afterwards found out to be something else. Quite a number of labels are so beautifully printed that they appear to be specimens of some merit. Conversely, some of the stamps which are genuine are so crudely made that one might be excused for thinking they should not find a place in the stamp album.

As we remarked a little while ago, a postage stamp collection should not contain anything but adhesive stamps.



Revenue and Postal

That makes it quite clear that printed stationery stamps—such as the embossed stamps on the stamped envelopes one buys at the post office and also the stamps that are printed on the post-cards—should not be placed in.

In Great Britain we have to pay twopence every time we give a receipt for an amount over £2 and this amount is normally paid by sticking on a postage stamp for that value and defacing it by writing over the stamp our name and the date.

In this way we convert it from a postage stamp into an Inland Revenue stamp. The twopence we have paid will not be used in any way for the payment of postage so you see the stamp is no longer a postage stamp.



An essay for an air stamp

There is, however, an exception to this and the first illustration of the pair of stamps should make this clear. Both stamps are printed for inland revenue purposes, but between 1867 and 1881 it was permissible for one to use this type of stamp for letters. One of the stamps in the illustration has, obviously, been used in this way, for it has a quite distinct postmark. The figures 405 show the area in which it was used. The other has writing on it,

showing it was used for a receipt.

Then again there are excise stamps that must be avoided. Canadian excise stamps seem to be very common now, but they have no place in the stamp album. Neither have the stamps which used to be stuck over the corks of medicine bottles; they are only placed there as a method of paying the patent medicine duty.

Legal Fees

Nearly all legal documents require a fee and this is very frequently collected by means of a stamp. The value depends on the document. Generally this has to be sent away and the stamp is embossed on the document. Such embossed stamps do not carry any postal privileges so they have to stay outside, however tempting it may be to have a stamp valued pounds.

Rhodesia in 1890 issued stamps with a face value up to £10. As you can imagine only a few of these high values were used for actual postal purposes, most of them were used for inland revenue payments. Postal specimens are quite valuable but the fiscally used have no value to speak of. Unfortunately, most of the high value stamps of this set that one comes across are of the lesser use and consequently of little value.

Christmas Labels

Christmas has just passed and most probably a number of you received parcels with 'Christmassy' labels on them such as are sold for charitable purposes or as a fund for giving treats to poor children. Such stamps (they are very frequently in the form of stamps) should not, however, go in the collection unless they have been purchased from postal authorities and carry the right to defray the cost of postage. Do not confuse these labels with the Christmas Charity stamps from such places as New Zealand or Switzerland.

The next illustration is an essay for a British Air Stamp printed at the International Stamp Exhibition held at London in 1923. It was on sale rather as a memento of the occasion. For the normal stamp collector it has no value but for the collector of Air Mail stamps—particularly if the collector goes in for the history of Air Mails—then it is quite an interesting item to have.

An Air Trophy

Another type of stamp which cannot be placed in a proper stamp collection is the type illustrated next—the Lundy Island stamp; this is rather a curious example, because this stamp does up to a point carry postage rights with it, but only postage right for a short distance and for a certain direction. On Lundy

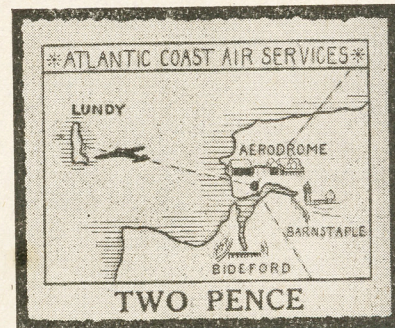
Island, which is nearly 20 miles off the coast of Devonshire (the stamp shows quite clearly where the island is situated); there are very few people indeed on the island and consequently postal services have not always been quite as good as on the mainland.

In 1935 an Air Mail Service was started between Lundy and Barnstaple and for letters to be taken by air they had to have special stamps attached. These stamps only had value for the air passage between the island and the mainland. After that the mail had to go by ordinary route. Consequently they had to have ordinary stamps as well as the special air stamps. This air service was held up by the outbreak of the war in 1939.

Telegraph Stamps

Telegraph stamps should not go in the same album as the ordinary postage stamps. In countries which have different stamps for telegrams, then it is quite easy to separate the two. But in Great Britain, where we have the same stamps for the two purposes, then telegraph and postage stamps are virtually the same. Though, generally speaking, the post office does not allow the stamps which are on telegrams to get into collectors hands.

Some countries have the same stamps,



Lundy Island Air Stamp

but they have a different method of cancelling. For example, Spain punches a hole right through the stamp so no one is likely to want any of their telegraph stamps.

If you are in any doubt whether a stamp should go in the album, why not put it into a tin or an envelope and then when you have the opportunity ask a more advanced collector to tell you what you should do? You will save yourself the disagreeable task of taking stamps out of the album, because they are not really collectable specimens.

Look out for an article shortly, dealing with the great International Stamp Exhibition being held in London next month.

MISCELLANEOUS ADVERTISEMENTS

The advertisements are inserted at the rate of 3d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Order and Stamps must accompany the order and advertisements will be inserted in the earliest issue. Announcements of fretwork goods or those shown in Hobbies Handbook are not accepted. Orders can be sent either to Hobbies Weekly, Advert. Dept., Dereham, Norfolk, or Temple House, Temple Avenue, London, E.C.4

MAKE £1 an hour, genuine home employment. Full instructions, 3/-. —R. Lowes, Rectory Terr., Simonburn, Hexham, Northd.

APPLICANTS for approvals sending 6d. receive special album 8ins. x 6½ins., 60 quadrille pages.—Goddard, 41 Kimberley Road, Bournemouth.

STAMPS—Send stamp for approvals. Choose your own free gift. Packets, sets and single stamps.—H. W. Harman, 6 St. Patrick's Road, Coventry.

SEND S.A.E. for particulars of well paid homework.—Box 18, C/O 41 Wade St., Lichfield.

STAMP bargains are found in my Approvals. Applicants receive surprise 20 stamps. Without approvals, 1/-.—S. H. Fleming, Glyn Avenue, Colwyn Bay.

KEEN stamp collectors want Selby's Approvals. S.A.E.—Selby, 66 Donnington Road, London, N.W.10.

PLANS for railway and ship modellers. We have hundreds of accurate, full size drawings available. 24 p. catalogue, 6d.—Skinley, 132 High Street, Southend-on-Sea, Essex.

STAMPS from ½d. each, on 7 days approval. Please state if Foreign or Empire are wanted.—Box 22, Hobbies Weekly, Dereham, Norfolk.

PERFORATION gauge free. To all applicants for our approvals. Ideal for beginners and medium collectors. Send S.A.E. for trial selection.—Box No. 33, Hobbies Weekly, Dereham, Norfolk.

ENLARGE your drawings mechanically with the 'Perfect' pantograph. Oak with metal fittings. With instructions, 6/6 posted.—G. F. Rhead, Thurston End, Hawkedon, Suffolk.

FREE, Free! 25 fine stamps to all requesting approvals.—Howes, 685 Bath Rd., Hounslow, Middx.

FREE—stamps catalogued 5/- to applicants for ½d. approvals.—Cox, 17 Stoneleigh Park Road, Ewell.

LONELY? Join Friendship Circle. Details, 7½d.—Secretary, 34 Honeywell Road, London, S.W.11.

1,000 World stamps, 3/9. Bargain catalogue free.—Whitby, Godshill, Fordingbridge, Hants.

REQUEST stamp approvals. Receive small album, stamps, hinges, free. Postage 6d.—A. M. Day, 73 Thornton Gate, Cleveleys.

STAMPS FREE!! Twenty unused (2½d.).—G. H. Barnett, Limington, Somerset.

PENNY Black and Sir Rowland Hill on stamp of Cuba, absolutely free. Request approvals.—Hubert Rajski, 211c Thornes Road, Wakefield.

AUSTRALIAN U.P.U. and other large colonial free to approval applicants.—P. R. Cox, 32 Wadley Road, Leytonstone, E.11.

CIGARETTE cards—Bargain list.—Louis George, 11 Friars Street, Ipswich. Established 1908.

HEADPHONES type DLR 5 with lead, 4/9; super quality type DLR1 with double metal head band and lead, 6/6; both types suitable for crystal sets. Aluminium telescopic dinghy masts, 15ins. closed, opens to 9ft., ideal for fishing rods, tent poles, etc., 5/6. 4½ volt twin coil buzzers, 2/6. Crystal set kits complete with phones and instructions, 12/6. All items 6d. postage. Send S.A.E. for free list and Morse code alphabet.—J. Hallett, 19 Upper Richmond Road, London, S.W.15.

40 DIFFERENT stamps free, including Silver Jubilee, Coronation, Pakistan, etc. Send 3d. postage and request approvals.—J. F. Smith, 60 Boyne Road, London, S.E.13.

OFFERS invited for the manufacture of magnetic draughts, etc., to prov. patent 2655/50, or for purchase of patent rights.—Osborne, 4 Esher Rd., Esher, Surrey.

100 DIFFERENT stamps free (including triangular and pictorials), to approval applicants enclosing postage.—N. Johnson (Dept. H), 19 Hillside, Slough, Bucks.

500 COLLECTORS' duplicates, 2/6. Amazing variety.—Belfields, Stour Hill, Quarry Bank, Staffs.

PERSONS required to fill vacancies in our out-work department. Write—Dept. 11, Empire Co., 117 Nottingham Road, Loughborough.

300 SUPER stamps. Many large pictorials, 2/-.—Rummins, 25 Pendennis Park, Brislington, Bristol.

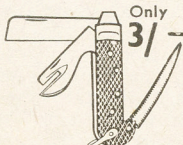
ARAWAK stamp free with approvals.—Wilfred's, 5 Half-way-tree Road, Kingston, Jamaica, B.W.I.

ARTIFICIAL marble powder. Entirely new plastic for casting book-ends, ashtrays, wall vases, etc. Easy to use—simply mix with water; sets granite hard with scintillating crystalline structure. Resistant to heat, impervious to water. Any type of veining and colour obtainable. Synthetic Rubber Moulds. Liquid preparation for making permanent, elastic moulds for repetition casting plaster plaques, etc. Very simple system. Write for details.—Karlena Art Stone Co., 26 Whitelaw Road, Chorlton-cum-Hardy, Manchester

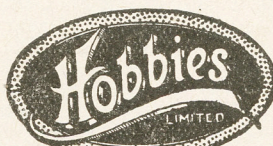
FULL OF INTEREST the TWO books
"WHERE'S THAT CAR FROM?"
and
"POPULAR CARS"
(40 Illustrations)
6d each
from all Booksellers and Stationers
Raleigh Press, Exmouth.

4-in-1 ARMY JACK KNIVES!

The real Soldier's Knife as supplied to the fighting troops. Fine for model making and every hobby. Very solid construction with bright stainless steel blade, spike, screwdriver, can opener and carrying loop. Your kit's not complete without it. Write for one today! Cash with order (Add 6d postage)



SCOTT & REED LTD
DEPT. 29 1-5, JERMYN STREET, S.W.1.



BRANCHES

LONDON

78a New Oxford St., W.C.1
(Phone MUSeum 2975)
87 Old Broad Street, E.C.2
(LONdon Wall 4375)
117 Walworth Road, S.E.17

GLASGOW

326 Argyle Street
(Phone CENTral 5042)

Head Office & Factories—HOBBIES LTD., DEREHAM, NORFOLK

MANCHESTER

10 Piccadilly
(Phone CENTral 1787)

BIRMINGHAM

14 Bull Ring

SHEFFIELD

4 St. Paul's Parade

LEEDS

10 Queen Victoria Street
(Phone 28639)

HULL

10 Paragon Square

SOUTHAMPTON

25 Bernard Street

BRISTOL

30 Narrow Wine Street
(Phone 23744)

TRIANGULAR DUTCH free



SEND NOW
to the Windsor Stamp
Co. for this really
magnificent Triangular
Stamp of HOLLAND
(Netherlands),
which we will
send to you—
**ABSOLUTELY
FREE.**

This very lovely stamp depicts Pallas Athene (Minerva), and was issued in 1936 to Commemorate the 300th Anniversary of Utrecht University. It is a stamp that every collector wants, and you can have one from us to improve and add interest to your collection, **ABSOLUTELY FREE.** Just send 3d. stamps for postages and lists, ask to see an Approval selection (no obligation to purchase any), and ask for **TRIANGULAR DUTCH STAMP FREE.**
WINDSOR STAMP CO. (Dept. 12) Uckfield, Sussex

ALL ABOUT FRETWORK

by W. F. Chambers
(Editor of Hobbies Weekly)

The book for all fretwork enthusiasts

Bound in paper covers, **2/6** net.

Or there is a cloth bound edition at **5/-** net.

Obtainable from all booksellers, branches of Hobbies, or from the publishers :

VAWSER & WILES (London) LTD.
356/358 KILBURN HIGH ROAD, LONDON, N.W.6

BRITFIX BALSA CEMENT



★ The ideal transparent cement for Balsa Ply Wood, Hard Woods, and Plastics, combining rapid drying with utmost tenacity.

Remember
**STICK BY
BRITFIX**

THE HUMBER OIL CO. LTD., HULL

YOU CAN BECOME A HANDICRAFTS INSTRUCTOR

Experience not essential

Men who enjoy making things in wood or metal can turn their hobby into a well-paid, permanent and interesting Career. Short hours, long holidays, and security in a job you would really enjoy, can be yours if you become a Handicrafts Instructor. Let us send details of the easiest and quickest way to get the necessary qualification.

**We definitely guarantee
"NO PASS—NO FEE"**

If you would like to know about our unique method of preparing you for one of these excellent appointments, write today and we will send you our informative 176-page Handbook—free and without obligation. Mark your letters 'Handicrafts Instructor'.

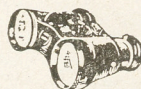
**BRITISH INSTITUTE OF
ENGINEERING TECHNOLOGY**

595 Shakespeare House,
Stratford Place, London, W.1

BIET

Double Protection with YOUR FLY-SHEET FOR 15/- TENT

OR CASH PRICE
£3-9-6 PLUS 1/6 POSTAGE
MAKE ASSURANCE DOUBLY SURE
of 9/9. Without fly sheet, 9/6 deposit. 6 monthly payments of 8/-.
EX-GOVERNMENT SOLID LEATHER HAND SEWN BOOTS 12/6
postage etc. 1/3. Boys, Ladies and Mens with small fittings, finest quality brand new solid leather Boots represent the finest value ever. No stronger Boot was ever made. Sizes 3 up to 7½. Also Mens 11 to 13 same price.



GREAT SURPLUS OFFER "PARATROOP" BINOCULARS

7 oz. Crystal-Clear Lenses. Ideal holiday, sporting events. 42/6. W.D. model, full size, **£3 10/-**. Very Special 6-Lens Achromatic Model, **£5 19/6**. Both complete in case, &c. All post 1/-

Other **TENTS, MARQUEES, TELESCOPES**, etc. Terms. Send for list.
HEADQUARTER & GENERAL SUPPLIES LTD., (Dept. HOB),
196-200, Coldharbour Lane, Loughborough Junc., London, S.E.5
Open all Saturday. Closed 1 p.m. Wednesday.

**THIS 35^{mm} STRIP
PROJECTOR GIVES YOU
YOUR OWN
FILM SHOW
IN
YOUR OWN
HOME**

TRANSFORMER
MODEL
A.C. MAINS
ONLY
BATTERY
MODEL
18/6
12/6

EACH
COMPLETE
READY TO USE

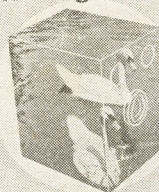
**START THIS
FASCINATING
NEW HOBBY**

LATEST INCLUDE

Dick Barton Strikes Back. Bertram Mills Circus, 1950.
Mills v. Maxim Fight (Actual K.O. Blows). Laurel & Hardy
Blockheads. Famous Footballers. England at Sport, 1949.
Buffalo Bill Rides Again. All 6d. per packet.

**ASK AT YOUR LOCAL STORE FOR THESE EXCITING
FILMS AND REMEMBER—IT'S THE ACTUAL REAL FILM.**
Fowden Films & Optical Service, 2 Hastings St., Luton.

YOUR GUIDE TO BETTER BOX CAMERA photography

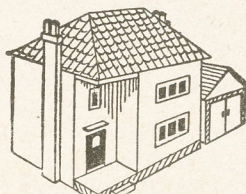


Your Guide to Better Box Camera Photography is a booklet you should have if you want to know how to get first-rate pictures with a box camera. It is published this month. Another helpful booklet, "Camera Tips for Everyone", is specially written for the young amateur. Both are profusely illustrated.

Available at your nearest photographic dealer, or, in case of difficulty direct from the publishers. (Write for latest illustrated catalogue of photobooks).

1/-
each

FountainPress
46-47 Chancery Lane, W. C. 2.



DOLL'S HOUSE

How to make in a simplified step-by-step manner a desirable four room Doll's House with electric light and separate garage if required

ALL MATERIAL EASILY OBTAINABLE

Send a 2/6 P.O. now for complete Plan and instructions Doll's House Paper and Doors and Windows, which open, are available. S.A.E. for list.

TRADE INQUIRIES INVITED

**ZIMPLAN 88 WARE ROAD
HODDESDON, HERTS.**

